Improve Water Quality on a Watershed Basis
Implementation Plan for Subobjective 2.2.1

States and Tribes face many complex and challenging environmental problems related to the Nation's waters. Unlike the problems of the past, today's water quality problems are caused by many different and diffuse sources of pollution that occur as a result of changes in day-to-day practices. To solve such complex and interrelated problems demands a modern approach to environmental protection – an approach grounded in sound science, innovative solutions, broad public involvement and adaptive management. About a decade ago, EPA embraced and took steps to encourage such a method – the watershed approach – to better address water quality problems. This approach, which focuses multi-stakeholder and multi-program efforts within hydrologically defined boundaries to protect and restore our aquatic resources and ecosystems, offers a most effective opportunity to tackle today's challenges.

Although ten years of effort have resulted in general awareness of the watershed approach within the Agency and at the State and local level, recent evaluations show substantial gaps in actual implementation. EPA believes that the watershed approach should not be seen as merely a special initiative, targeted at just a select number of places or involving a relatively small group of EPA or State staff. Rather, it should be the fulcrum of Federal and State restoration and protection efforts, and those of our many stakeholders, both private and public. EPA has both a national interest in, and responsibility for, supporting watershed goals and approaches and believes that such an approach is one of the most important environmental guiding principles to maintain and restore the chemical, physical and biological integrity of the Nation's waters.

Protecting water quality at a watershed level is a new challenge at the Federal, State and local level. The best way to achieve progress in improving and protecting waters and watersheds is by applying an adaptive management approach at the outset to better understand the problems, set challenging but realistic goals, and address opportunities associated with developing programs and building partnerships at the watershed level. Over the next five years, EPA expects to use this adaptive management framework to manage both core programs and watershed protection activities in order to accomplish the five year goals for watershed and water quality improvement expressed in the *Strategic Plan*. Without this adaptive management process, progress toward measurable improvements in the Nation's waters will occur in a haphazard and unpredictable manner.

Strategic Outcomes and Targets

This watershed subobjective is complex, and includes numerous measures requiring reporting at the national, State and tribal level. The entire watershed subobjective has two separate national "outcomes"; three additional national strategic targets that specifically address restoring water quality, reducing nutrient levels, improving tribal waters, and improving tribal

access to basic sanitation; and 33 Program Activity Measures, the majority of which request State reporting and State targets. These are summarized in Table 1, at the end of this document.

For this subobjective, EPA has developed two specific national measures that the Agency believes best reflect our progress in meeting the national goal of clean and safe water: restoring water quality in 600 watersheds and improving water quality in 200 watersheds. These are critical measures because they define our progress in environmental, not programmatic, terms: how many watersheds are restored, and how many have improved water quality. It is also important to emphasize that the only way that the national watershed goal will be reached is if Regions and States make progress in improving water quality in all watersheds, not just those individual watersheds targeted for specific watershed protection activities.

Both these watershed measures require that information on individual waters or water segments in each State be aggregated to a larger "watershed" scale. This scale is the USGS 8-digit Cataloging Unit, known as HUC. There are 2,262 of these cataloging unit scale watersheds across the Nation. Watersheds were first classified with this metric using the 1996 305 (b) report data. Subsequent data provided trends in the number of watersheds meeting this criterion. The trend line, which showed initial improvements in HUC8-level water quality, projected to the deadlines in the *Strategic Plan*, were the basis for the number of watersheds in the goal. The 2008 goal is to have 600 of these watersheds meeting water quality standards in at least 80 percent of their assessed segments (hereafter, referred to as "meeting the 80% attainment goal"). The 2002 baseline was developed by identifying the watersheds where at least 20% of their waters are assessed, and then computing whether 80% of those assessed waters are meeting their water quality standards. In 2002, approximately 453 of the State's 2,262 8-digit HUCs were meeting their 80% attainment goal. This means that about another 150 watersheds need to reach their 80% attainment goal by 2008 to meet the 600 watershed target.

The *Strategic Plan* also includes a goal that addresses protection of water quality. Two hundred watersheds (or approximately 10 percent of the national total of 8-digit HUCs) were selected as a reasonable goal for protection and maintenance of watershed water quality. The second part of this 2008 national watershed goal states that at least 20 percent of the assessed water segments show improvement above 2002 conditions.

Program Activity Measures (PAMs)

This Watershed Subobjective contains 33 Program Activity Measures (PAMs) for key Office of Water (OW) programs that will affect clean waters and watersheds: water quality standards; monitoring and assessment; watershed planning, TMDLs and nonpoint source; NPDES permitting; and wastewater infrastructure. This means that nearly one-third of the 88 Water Office program activity measures are captured under this watershed subobjective, with 19 State reporting requirements, and 18 requiring specific yearly targets. These targets are intended to provide a point of reference as Regions and States/Tribes define more formal commitments in

the Spring/Summer of 2005.

Key National Strategies

Developing a plan that addresses this complex subobjective is a new challenge, and requires implementing a new approach that integrates numerous water program elements at a watershed level, employs multi-scale water quality data, applies innovative ideas, engages diverse federal, State and local stakeholders in problem solving, is generally consistent across the country, and yet remains flexible enough to reflect national and state-specific priorities and circumstances. These objectives can best be met using a three-part strategy:

- Implement core clean water programs, including innovations that apply programs on a watershed basis;
- accelerate watershed protection, and
- apply an adaptive management framework to make this process work.

(1) Implement Core Clean Water Programs*:* To protect and improve water quality on a watershed basis in FY2006, EPA and the States need to continue to focus their work on implementing and integrating their work in the six key program areas that form the foundation of the water program and this subobjective. Core water program work includes:

-- strengthen the water quality standards program;
-- improve water quality monitoring and assessment;
-- develop total maximum daily loads and related plans;
-- implement effective nonpoint source practices on a watershed basis;
-- strengthen the NPDES permit program; and
-- support sustainable wastewater infrastructure.

Priorities for FY2006 in each of these key core water program areas are described below.

***(A) Strengthen Water Quality Standards*:** Water Quality Standards are the regulatory and scientific foundation of water quality protection programs under the Clean Water Act. Under the Act, States and authorized Tribes establish water quality standards that define the goals and limits for waters within their jurisdictions. They are used to determine which waters must be cleaned up, how much may be discharged, and what is needed for protection.

To help achieve strategic targets, EPA will continue to review and approve or disapprove State and Tribal water quality standards and promulgate replacement standards where needed; develop water quality criteria, information, methods, models and policies to ensure that each waterbody in the United States has a clear, comprehensive suite of standards that define the highest attainable uses; and as needed, provide technical and scientific support to States, Territories and authorized Tribes in the development of their standards. EPA will also continue

implementation of the Strategy for Water Quality Standards and Criteria (EPA, August 2003), http://www.epa.gov/waterscience/standards/strategy, which identifies highest priority actions for strengthening the policy and scientific foundation of State and tribal water quality programs.

More specifically, EPA will develop pollutant criteria documents for high priority surface water pollutants posing the greatest risk (see Program Activity Measure WQ-1) and work with States and authorized Tribes to encourage adoption of new criteria, giving special attention to nutrient criteria for rivers, streams, lakes and reservoirs (see Program Activity Measure WQ-2) and adoption of biological criteria (see Program Activity Measure WQ-3). In a related effort, EPA will encourage and support Tribes to obtain approval to administer water quality standards programs and to develop water quality standards (see Program Activity Measure WQ-4).

As described in the discussion of watersheds in Section 2 below, EPA will also work with States and Tribes to help them focus efforts on those waterbodies or issues that offer the best opportunities to support watershed improvements (see Program Activity Measure WQ-26).

EPA will also work with States and Tribes to ensure the effective operation and administration of the standards program, including assuring the timely completion of triennial reviews, focused on those changes to water quality standards that will most facilitate achievement of watershed goals and targets (see WQ-5) and the timeliness of EPA's review process (see Program Activity Measure WQ-6).

(B) Improve Water Quality Monitoring Over the next 5 years, EPA will work with States and Tribes in defining and implementing a two-part approach to building a more scientifically sound water quality monitoring program by: (1) providing information to make good watershed protection decisions; and (2) tracking changes in the Nation's water quality over time.

Congress has recognized that improved information about the condition of waterbodies is critical to sound water quality protection decisions and has provided new funding to support expanded monitoring work. A top priority for FY 2006 is to support States in the development of comprehensive monitoring programs consistent with national monitoring guidance published in 2003. EPA is working to assist all 56 States and Territories in adopting and implementing comprehensive monitoring strategies and has set a 2006 goal of all 56 States/Territories completing this work (see Program Activity Measure WQ-7).

EPA is also supporting development of comprehensive monitoring strategies by Tribes and has a goal of helping 90 Tribes develop strategies by 2008 (see Program Activity Measure WQ-10). In a related effort, EPA will work with States and Territories to support development of integrated assessments of water quality conditions, including reports under section 305(b) of the Clean Water Act and lists of impaired waters under section 303(d) of the Act. EPA has a goal of all 56 States and Territories providing integrated assessments in 2008 and has an interim

goal of 45 States completing this work in FY 2006; increasing from the 2002 baseline of 21 States (see Program Activity Measure WQ-8).

***(C) Develop Total Maximum Daily Loads and Related Plans*:** Development of a total maximum daily load or "TMDL" for an impaired waterbody is a critical tool for meeting water restoration goals. TMDLs focus on clearly defined environmental goals and establish a pollutant budget, which is then implemented via permit requirements and through local, State, and federal watershed plans/programs. EPA will track the degree to which States develop TMDLs based on a goal of being 100 percent on pace each year to meet state schedules or straight-line rates that ensure that the national policy of TMDL completion is met (on average, within 13 years of listing) (see Program Activity Measure WQ-12). EPA encourages States to organize schedules for TMDLs, or TMDL alternatives, to address all pollutants of an impaired segment (see Program Activity Measure WQ-33) and to organize efforts so that segment level restorations are clustered to accomplish improvements on a watershed basis.

Because stakeholder involvement is crucial in accelerating watershed improvement, EPA encourages tribal participation in restoring those waters not meeting water quality standards. EPA will work with both States and Tribes to increase the participation of Tribes in development of TMDLs or related watershed-based plans to protect impaired waterbodies that affect Tribal waters (see Program Activity Measure WQ-13).

***(D) Control Nonpoint Source Pollution*:** Polluted runoff from sources such as agricultural lands, forestry sites, and urban areas is the largest single cause of water pollution. EPA and States are working with local governments, watershed groups, property owners, and others to implement programs and management practices to control polluted runoff on a watershed basis. EPA provides grant funds to States under Section 319 of the Clean Water Act to implement comprehensive programs to control nonpoint pollution. EPA has published grants guidelines for the use of these funds calling for an expansion of efforts to manage nonpoint pollution on a watershed basis through the development and implementation of watershed plans, with special emphasis on restoring impaired waters on a watershed basis (see section (2) Accelerate Watershed Protection).

Nitrogen, phosphorus, and sediment from nonpoint sources are significant pollutants in the Nation's waters. EPA will monitor progress in reducing loadings of these pollutants through section 319 funded projects (see PAM WQ-14). In addition, EPA estimates that some 5,967 waterbodies are primarily impaired by nonpoint sources of pollution, and will track progress in partially or fully restoring these waters (see PAM WQ-15). By "partially restore," EPA means either of the following:

1) A waterbody is impaired for more than one use, but is restored for one or more (but not all) of those uses.

2) A waterbody has a use that is impaired by more than one pollutant, but meets the criteria for one or more (but not all) of those pollutants.

Fully restored means that for water that was impaired as of the baseline year, all uses are now being met.

In related efforts, EPA will collaborate with State managers of Clean Water State Revolving Loan Funds to increase investments in projects to reduce nonpoint source pollution (see Program Activity Measure WQ-16).

***(E) Strengthen NPDES Permit Program*:** The NPDES program requires point sources discharging to water bodies to have permits and pretreatment programs to control discharges from industrial facilities to sewage treatment plants. In FY 2005, EPA continued to work with States to implement the "Permitting for Environmental Results Strategy" to address concerns about the backlog in issuing permits and the health of State NPDES programs. The strategy focuses limited resources on the most critical environmental problems and addresses program efficiency and integrity, which includes activities to streamline permit issuance and assessments of State programs and permit quality. EPA has prepared assessments of NPDES programs, which are being posted on the NPDES web site, and is tracking implementation of follow-up actions that result from the assessments (see Program Activity Measure WQ-17).

As part of this effort to strengthen the permit program, EPA has worked with States to define a subset of permits with high environmental priority with a goal of assuring that 95% of these permits are issued as scheduled each year (see Program Activity Measure WQ-29). EPA also has a goal of assuring that not less than 90% of all permits are current for States and Tribes each year. EPA is also working with States, Tribes, and other interested parties to strengthen the permit program in several other areas that will benefit water quality. The Agency will work with States to ensure that all States are implementing the Concentrated Animal Feeding Operations (CAFO) program consistent with recent regulations by 2008, with a 2006 goal of 90% CAFO coverage by NPDES permits (see Program Activity Measure WQ-19).

In addition, EPA expects that 100 percent of NPDES programs will have current general permits requiring storm water management programs for Phase II (mid-sized) municipalities and requiring storm water pollution prevention plans for construction sites covered by Phase II of the storm water program (see Program Activity Measure WQ-20). Finally, EPA and States will monitor the percentage of significant industrial facilities that have control mechanisms in place to implement applicable pretreatment requirements prior to discharging to publicly owned treatment works (POTW) (see Program Activity Measure WQ-21).

Most industrial facilities discharging directly to water bodies or to sewage treatment plants have permit limits or pretreatment controls based on national regulations developed for the class of industrial activity. During FY 2004 and 2005, EPA expects to complete regulatory

actions for meat and poultry processing, construction and development sites, aquaculture farms, and cooling-water intake structures. In consultation with the public, EPA will also establish program priorities based on sound science and demonstrated benefits, including the potential for cost-effective risk reduction. In addition to evaluation of regulatory options, EPA will consider other approaches (including clarifying guidance, environmental management systems, and permit writer support).

***(F) Support Sustainable Wastewater Infrastructure*:** Much of the dramatic progress in improving water quality is directly attributable to investment in wastewater infrastructure—the pipes and facilities that treat the nation's wastewater. But the job is far from over. EPA has documented a significant gap between the nation's planned wastewater investments and its needs. Communities are challenged to find the fiscal resources to replace aging infrastructure, meet growing infrastructure demands fueled by population growth, and secure their infrastructure against threats. Clean Water State Revolving Funds (CWSRFs) provide low-interest loans to help finance wastewater treatment facilities and other water quality projects. Recognizing the substantial remaining need for wastewater infrastructure, EPA expects to continue to provide significant annual capitalization to CWSRFs for the foreseeable future. This continued investment will be tracked using measures of the return on the Federal investment and the fund utilization rate (see Program Activity Measures WQ-23 and WQ-24). In addition, EPA will work with States to encourage the development of integrated priority lists addressing nonpoint pollution and estuaries protection projects, as well as wastewater projects with a goal of increasing the number of States using these systems from 19 in 2002, to 29 in 2006 (see Program Activity Measure WQ-32). EPA will also work with the States to develop improved outcome and output measures (see Program Activity Measure WQ-25).

Another important approach to closing the gap between the need for clean water projects and available funding is to use sustainable management systems to prolong the lives of existing systems and provide clean water at lower cost. EPA will also work to encourage rate structures that lead to full cost pricing and support water metering and other conservation measures.

In a related effort, EPA will work with other Federal agencies to improve access to basic sanitation. The 2002 World Summit in Johannesburg adopted the goal of reducing the number of people lacking access to safe drinking water and basic sanitation by 50 percent by 2015. EPA will contribute to this work through its support for development of sanitation facilities in Indian country and Alaskan Native villages, using funds set aside from the CWSRF and targeted grants. Other Federal agencies, such as Department of the Interior (DOI) and US Department of Agriculture (USDA), also play key roles in this area.

Properly managed on-site/decentralized systems are an important part of the nation's wastewater infrastructure. EPA will also encourage State, tribal, and local governments to adopt voluntary guidelines for the effective management of these systems (see Program Activity Measure SS-4) and to use Clean Water State Revolving Loan Funds to finance systems where

appropriate.

***(G) Implementing Core Programs on a Watershed Basis**:* The best way to accomplish the five year goals for watershed and water quality improvement is to deliver clean water programs on a watershed basis. In addition to development of watershed based plans, discussed below, some examples of the core program activities that are now being implemented on a watershed basis as a result of innovations developed by State, EPA Regions, and others include the following:

Watershed Permits: Development of discharge permits as part of a larger watershed planning process can result in more efficient administration of the permit program and most cost-effective control of pollution sources. In FY 06, EPA will monitor the number of watersheds in which a watershed permit is issued consistent with the recently published watershed permit policy and the number of States that issue permits on a rotating basin basis (see Program Activity Measure WQ-31).

Watershed Trading: Implementing core programs at the watershed level is an important first step toward creating a framework for trading of pollutants among sources in order to reduce the overall cost of attaining water quality goals (see EPA Trading Policy at www.epa.gov/owow/watershed/trading). EPA will monitor the number of discharge permits providing for trading. In addition, EPA has set a goal of developing 200 TMDLs or watershed plans by 2008 that are designed to restore nutrient limited waters and also contain provisions to enable trading (see Program Activity Measure WQ-30).

Other specific examples of core program activities that can be implemented on a watershed basis, and which can be described in Regional and State plans, include: reviewing water quality standards and revising them if necessary before making resource commitments; implementing innovations set forth in the Strategy for Water Quality Standards and Criteria; expanding the use of innovative approaches to monitoring and collecting information in watersheds (e.g. using probabilistic or landscape designs); helping States develop and adopt a "rotating basins" approach to their water programs; promoting the use of watershed plans to guide greater investment of SRF funds to address nonpoint sources; and upgrading a State's continuing planning process to ensure development of watershed approaches.

(2) Accelerate Watershed Protection:

Strong execution of core Clean Water Act programs is essential to restoring and protecting the Nation's water quality. These core programs alone, however, are not sufficient to maintain and accelerate progress toward cleaner water and accomplish the water quality improvements called for in the Agency's *Strategic Plan*. Today's water quality problems are often caused by many different and diffuse sources and individual practices. Addressing these complex pollution problems demands an approach grounded in sound science, innovative

solutions, broad public involvement, and adaptive management. About a decade ago, EPA embraced the watershed approach as a better way to address water quality problems. This approach focuses multi-stakeholder and multi-program efforts within hydrologically defined boundaries to protect and restore our aquatic resources and ecosystems. In addition to implementing core programs on a watershed basis, as described above, acceleration of watershed protection can be accomplished by working in two key areas:

-- support local watershed protection efforts; and
-- initiate or strengthen watershed protection for critical watersheds/waterbodies.

Over the past decade, EPA has witnessed a groundswell of locally-driven watershed protection and restoration efforts, including stronger local partnerships and increased local capacity. In many communities, watershed stakeholders such as citizen groups, government agencies, non-profit organizations, and businesses have come together and created long-term goals and innovative solutions to clean up their watersheds and promote more sustainable uses of their water resources. EPA estimates that there are approximately 6,000 local watershed groups active nationwide, and many of these local groups are responsible for dramatic water quality improvements in their communities through collaborative efforts.

EPA is developing national tools, training, and technical assistance that will help community partnerships be more effective at improving watershed health. Many local watershed partnerships need help to develop the skills necessary to set challenging but realistic goals, build local capacity, and develop financial resources. EPA also helps local groups design watershed monitoring, assessments, plans, and implementation measures to achieve clean water. EPA recognizes that land use decisions affecting water quality generally occur at the local government level and that inter-jurisdictional coordination and local partnerships provide a strong foundation for watershed protection. EPA provides tools and guidance to foster these efforts.

The National Water Program has sustained a positive experience with using a watershed protection approach to supplement core programs in key watersheds. At the largest scale, EPA operates successful programs addressing the Chesapeake Bay, Great Lakes, and Gulf of Mexico. Other individual watershed initiatives have helped prove the value of watershed protection processes (e.g. Lake Champlain, Long Island Sound, National Estuary Program watersheds). Each of these projects provides strong evidence of the value of a comprehensive approach to assessing water quality, defining problems, integrating management of diverse pollution control, and defining financing of needed projects.

For FY 2006, EPA will expand support for protection of key watersheds by building on the success of the Watershed Initiative (now called the *Targeted Watershed Grants Program*). The Agency awarded $15 million in grants in both FY2003 and FY2004 and has been appropriated $18 million for FY2005. Throughout this program, EPA will continue to support innovative watershed projects to foster targeted watershed protection and restoration activities in

an effort to meet the goals of the *Strategic Plan*.

In addition, the current grant guidelines for the Section 319 program (discussed in section (1)(D)) reserve $100 million for developing and implementing comprehensive watershed plans that are designed primarily to restore impaired waters on a watershed basis, while also protecting good quality waters. These plans must meet certain criteria outlined in the *Nonpoint Source Program and Grants Guidelines for States and Territories*. EPA has not dictated the scale of the watersheds to be addressed by these plans.

EPA has a goal of supporting a few hundred watershed plans over the next five years, and expects that at least 50 of these watershed plans will be substantially implemented by 2008. EPA will count plans as "substantially implemented" if they meet either of the following two conditions:

1) Those actions called for in the initial plan (i.e. prior to any later adjustment to the plan that may be deemed necessary) specifically geared towards remediating the impairment(s) have been implemented. The plan in this case must meet the nine criteria outlined in the nonpoint source grants guidelines.

2) Sufficient management measures and practices called for in the plan have been implemented to achieve the load reduction that are needed to meet water quality standards, even if the plan comes close to – but falls short of – including all nine criteria articulated in the NPS grants guidelines.

For FY2006, EPA will also count the number of plans that are under development and the number that are being implemented (see Program Activity Measure WQ-27). EPA will also work to develop partnerships with other Federal agencies to encourage their participation in watershed protection and to promote delivery of their programs on a watershed basis. For example, the USDA can make important contributions to watershed protection and EPA will work with USDA to promote coordinated use of Federal resources, including grants under section 319 and Farm Bill funds.

Program Activity Measure WQ-28 tracks the number of Tribes that have developed and begun to implement a watershed-based plan in relation to the Tribal Section 319 program. Many Tribes are still at the beginning stages of nonpoint source program implementation and need additional financial and technical support from EPA in order to successfully integrate watershed-based planning into their Tribal Section 319 programs. EPA will continue funding additional Tribal Nonpoint Source Workshops that include training on the development of watershed-based plans, and will target the use of competitive funding for the development and implementation of watershed-based plans (consistent with the FY 2005 Tribal 319 guidelines). Regional Tribal Coordinators will track the number of watershed-based plans that have been developed and are being implemented and report this progress annually to the National Section 319 Tribal Coordinator.

In addition to national level support for watershed protection, each EPA Region plays an important role in defining watershed needs and supporting watershed protection activities and projects. Some Regions use funds provided under the Regional Geographic Initiative to support watershed protection. In other Regions, special appropriations by the Congress provide support of specific watershed protection projects. Regions should also encourage States to develop watershed-based proposals for grants from the new State/Tribal Performance Fund proposed in the President's Budget ($23 million in FY2005) to support projects that directly support attaining environmental outcomes. Water activities will receive a significant portion of these funds.

(3) Apply an adaptive management framework:

Protecting water quality at a watershed level is a new challenge at the federal, state, and local level. EPA believes that the best way to achieve progress in improving and protecting waters and watersheds is by applying an adaptive management approach at the outset to better understand the problems, set challenging but realistic goals, and address opportunities associated with developing programs and building partnerships at the watershed level. The term "adaptive management" has been defined and applied in many different ways during the past 25 years, and has evolved to mean a type of "experimental" management that is essentially a process to "learn by doing." The iterative nature of the watershed approach encourages this adaptive management method of setting goals and targets to make maximum progress based on available information, while continuing to analyze and verify areas where information in incomplete.

An adaptive management framework applied to watershed protection involves several key components, including setting challenging but realistic goals, improving assessment and monitoring, identifying barriers to implementation; analyzing progress, and obtaining feedback regarding the effectiveness of different approaches that can then be used to adjust and realign the goals and specific program management and activities to make progress and achieve clean water goals. In particular, data analyses used to help set goals and to assess and measure the current status of water quality at the watershed level will need to be evaluated and updated to reflect additional monitored sites, improved monitoring methods, and new scientific information.

Regions, States and local stakeholders can then apply these new data, along with improved information about sources of pollution and pollution control methods, to adjust their watershed protection activities and program activities accordingly. Further, EPA and its State and Tribal partners can work together to review and revise water quality standards to remove barriers to water quality improvements and set challenging, but realistic, goals.

Finally, adaptive management can be used to promote innovative approaches, and can improve understanding, and facilitate long-term learning and responsiveness, of watershed protection at both the public and private level. Learning how to build and apply adaptive management to both core water programs and watershed protection activities to meet strategic planning objectives is, in itself, an adaptive process. Over the next five years, EPA expects to use this adaptive management framework to manage both core programs and watershed protection activities in order to accomplish the five year goals for watershed and water quality improvement expressed in the *Strategic Plan*. Without this adaptive management process, progress toward measurable improvements in the Nation's waters will occur in a haphazard and unpredictable manner.

Regional Watershed Game Plans

National initiatives to foster watershed management are important, but significantly expanding the level of watershed management will require expanded efforts by Regions and States to develop and implement protection plans for specific watersheds. In planning for FY 2006, EPA Regions have agreed to develop "Watershed Game Plans" for watershed restoration using a common set of key elements. The Game Plan will help Regions identify key activities that Regions should undertake to improve progress in meeting and measuring water quality goals. In developing its "Watershed Game Plan" each Region should consider the following questions:

- **Inventorying/Measuring/Accounting**: How will we address data issues, data management issues, identifying current actions, and developing tracking systems?

- **Targeting** : Where are we working or want to work, where can we make a difference for water quality? Where is the greatest bang for buck– across all programs and funding? How could we develop more documented approaches?

- **Directing**: What resources, financial, technical assistance, programmatic assistance, leveraged assistance, etc, can we bring to bear on these areas we plan to target and emphasize? Can grant guidance help?

- **Engaging**: Who do we need to bring along to make things happen on the ground and get the desired results? What capacity to we need to be building for watershed work that will be sustainable?

Defining Regional Waterbody/Watershed Goals

EPA recognizes that each EPA Region and each State needs to identify the mix of watershed approaches that best suits its needs. Regardless of the specific mix of watershed approaches adopted, however, each Region and State should commit to accelerating implementation of core programs on a watershed basis, expanding support for local watershed protection, and expanding watershed protection in key watersheds.

In the same way that each Region should work with States to define the best mix of watershed approaches, Regions and States should also work together to define the extent to which implementation of watershed approaches can be accelerated over the next five years. In defining the rate of acceleration of watershed approaches, Regions and States should use both the waterbody and watershed restoration and improvement goals in the EPA *Strategic Plan* as a point of reference while taking into account the extent of pollution problems and restoration work already underway. In 2000, States identified some 21,632 specific waterbodies as impaired (i.e. not attaining State water quality standards) on lists required under section 303(d) of the Clean Water (see section 4/A.2 of this *Guidance*). Although core programs contribute to improving these impaired waters, success in restoring the health of impaired waterbodies requires a waterbody specific focus to define the problem and implement specific steps needed to reduce pollution. In addition, success in restoring a significant percentage of impaired waterbodies requires setting interim and long-term goals to guide this work..

Nationally, EPA has adopted a goal of restoring 25% of those waters identified as impaired by 2012 with an interim goal of restoring 5% of these waters (i.e 1,082 waterbodies) by the end of FY 2006. The goal of restoring 25% of impaired waters by 2012 is included in the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) *Strategic Plan*.

Table III below provides information about the distribution of impaired waters across EPA Regions and indicates estimates of the progress each Region expects to make in restoring impaired waters by 2006, 2008, and 2012.

Table III: Water Segment Restoration Estimates by Region/Nation (Measure L)						
Region	Impaired Water Segments Identified in 2000	Estimated 05 Restoration to Attainment	Estimated Incremental 06 Restoration	Total Estimated 06 Restoration to Attainment (cumulative*)	Estimated 08 Restoration to Attainment (cumulative)	Estimated 2012 Restoration to Attainment (cumulative)
1	1,909	67	0	72	82	not reported
2	1,866	37	56	93	150	225
3	3,321	106	94	200	300	400
4	3,808	76	114	190	240	600
5	2,761	39	30	69	100	not reported
6	1,241	25	37	62	150	310
7	1,555	50	17	67	100	168
8	1,075	238	3	241	338	338
9	673	9	31	40	50	60
10	3,423	68	104	172	not reported	not reported
Totals	21,632	715 (3.3%)	486	1,206 (5.6%)	1,510 (partial)	2,101(partial)
National Goals in Strategic Plan	N/A	2005 Goal: 432 waters (2%)		2006 Goal: 1,082 waters (5%)	2008 Goal: TBD	2012 Goal 5,408 waters (25%)
		* Cumulative means FY06 estimates include FY05 estimates, etc.				

In addition, States and Regions have indicated that the time-frame for full restoration of impaired waters can be long and that the significant program efforts to put plans in place to restore waters need to be better recognized. Recognizing this issue, EPA will work with States to report the number of impaired water segments where restoration planning will be complete by the end of FY 2006 (see Program Activity Measure WQ-33). The completion of planning is an essential, intermediate step toward full restoration of a waterbody and can be documented more quickly and easily than actual waterbody improvement. In general, planning for restoration is complete when all the pollutant specific TMDLs for the waterbody are approved by EPA, or a watershed restoration plan that is determined by EPA to be an acceptable substitute for a TMDL, is complete.

Regions and States also have the option of estimating progress in restoring impaired waters as measured by attainment of some, but not all, designated uses (see Supplemental Measures in Appendix III of National Water Program Guidance). This "partial restoration" measure gives credit to numerous activities that have improved waters that would not have been recognized otherwise.

In identifying segments for which planning is complete, or will be complete in FY 2006, Regions and States should give priority to these segments where a coordinated effort to address multiple segments is likely to result in progress on a larger, watershed basis. EPA encourages States to develop TMDLs or related segment specific plans on a watershed basis wherever this is possible.

At the national level, EPA has adopted a goal of bringing an additional 11 watersheds into attainment of the watershed goal in FY 2006 and an additional 128 watersheds by the end of 2008. EPA has not adopted a national goal for watershed improvement by 2012. EPA recognizes that his goal poses substantial challenges, but expects that addressing the challenges will build capability to protect watersheds at any scale.

Tables IV and V provide information about the distribution of watersheds meeting the goals described in the EPA *Strategic Plan* across the EPA Regions and indicate estimates of the progress each Region expects to make in increasing the number of watersheds meeting this goal by 2006 and 2008.

In addition, EPA recognizes that watershed restoration takes time. Regions have the option of including an estimate of watershed restoration progress by 2012 as well as under several other measures of progress being considered for adoption in the next *Strategic Plan*.

In developing these Regional estimates of progress, each Region should use the national goals in the EPA *Strategic Plan* as a point of reference and strive to accomplish waterbody and watershed restorations that will significantly contribute to meeting these national goals. Some Regions may find that continued implementation of core programs and related waterbody and watershed restoration work will result in a significant contribution to these national goals.

Table IV: Watershed Restoration Estimates by Region/Nation (2.2.1a)							
Region	Watershed (8 digit)	Watersheds Meeting Goal by 2002	Watersheds Expected to Meet Goal by 2005	Estimated Incremental 06 Restoration	Estimated Watersheds Meeting Goal by 2006 (cumulative*)	Estimated Watersheds Meeting Goal by 2008 (cumulative)	Estimated Watersheds Meeting Goal by 2012 (optional) (cumulative)
1	56	9	9	0	9	10	not reported
2	74	5	6	0	6	8	not reported
3	108	24	24	0	24	26	28
4	278	89	90	1	91	not reported	not reported
5	252	29	30	-7	23	not reported	not reported
6	366	131	132	1	133	not reported	not reported
7	202	18	19	0	19	22	not reported
8	337	113	114	0	114	116	119
9	263	19	21	0	21	TBD	TBD
10	338	16	17	2	19	not reported	not reported
Totals	2,274	453	462	-3	459	182 (partial)	147 (partial)
National Goals	N/A	453	2005 Goal of 462 watersheds		2006 Goal of 472 watersheds	2008 Goal of 600 watersheds	N/A
		* Cumulative means FY06 estimates include FY06 estimates, etc.					

Table V. Watersheds Improved (2.2.1b)						
Region	Watershed (8 digit)	Watersheds Expected to Meet Goal by 2005	Estimated Watersheds Meeting Goal by 2006 (cumulative*)	Last Year's (2005) Estimated Watersheds Meeting Goal by 2008 (cumulative)	Estimated Watersheds Meeting Goal by 2008 (cumulative)	Estimated Watersheds Meeting Goal by 2012 (optional) (cumulative)
1	56	0	0	2	2	not reported
2	74	7	not reported	not reported	not reported	not reported
3	108	0	**	10	**	**
4	278	1	not reported	not reported	not reported	not reported
5	252	not reported	0	not reported	not reported	not reported
6	366	8	8	32	not reported	not reported
7	202	1	not reported	3	not reported	not reported
8	337	not reported	not reported	not reported	not reported	not reported
9	263	not reported	2	not reported	5	10
10	338	0	1	not reported	not reported	not reported
Totals	2,274	17	11	47	7	10
		*Cumulative means FY06 estimates include FY05 estimates, etc.				
** R3 reported on Supplemental Measure 'Improvement in Targeted Watersheds'						
as 10, 12, and 20 for 2006, 2008, and 2012, respectively						

In the event, however, that a Region finds that its existing program delivery and alignment is not likely to result in a significant contribution to national watershed goals, the Region should use the process of developing the Watershed Game Plan as an opportunity to work with States to rethink and redesign the delivery of clean water programs to more effectively protect, improve and restore watersheds. Regional estimates of progress should be the Region's best effort to restore impaired waters and watersheds based on an affirmative effort to redesign and refocus program priorities and delivery methods where this is necessary.

Marshaling Resources to Support Regional Watershed Game Plans

Regions are encouraged to use some or all of the following strategies in marshaling resources to support Watershed Game Plans:

- realign water programs and resources as needed, including proposal of reductions in allocations among core water program implementation as reflected in commitments to annual program activity measure targets;
- coordinate Regional Watershed Game Plans with Targeted Watershed Grants;
- coordinate the Regional Watershed Game Plan with section 319 funds reserved for development of watershed plans;
- make effective use of water quality planning funds provided under section 604(b) of the Clean Water Act;
- make effective use of Regional Geographic Initiative Funds within the Region;
- leverage resources available from other Federal agencies, including the US Department of Agriculture; and
- apply funds appropriated by Congress for watershed or related projects.

C) Grant Program Resources

Key program grants that support this subobjective are:

-- the section106 State program support grants and Tribal program support grants;
-- the section 319 State program grant, including set-aside for Tribal programs;
-- Targeted Watershed Assistance grants;
-- Wastewater Operator Training grants;
-- Alaska Native Village Water and Wastewater Infrastructure grants;
-- Clean Water State Revolving Fund capitalization grants, including set-asides for planning under section 604(b) of the Clean Water Act and for grants to Tribes for wastewater treatment infrastructure.

For additional information concerning these grants, see the grant program guidance website at www.epa..gov/water/waterplan.

TABLE 1: Subobjective 2.2.1: Improve Water Quality on a Watershed Basis

Watershed Goal: By 2008, use both pollution prevention and restoration approaches, so that:

- In 600 of the Nation's watersheds, water quality standards are met in at least 80% of the assessed water segments (2002 Baseline: 453 watersheds; 2005 target: 462)
- In 200 watersheds, all assessed water segments maintain their quality and at least 20% of assessed water segments show improvement above conditions as of 2002 (2002 Baseline: 0 watersheds)

Strategic Targets: restore water quality, reduce nutrient levels, improve tribal waters and improve tribal access to basic sanitation:

- By 2012, fully attain water quality standards in over 25 percent of those water bodies identified in 2000 as not attaining standards, with an interim milestone of restoring 5 percent of these waters by 2006. (2000 Baseline: 21,632 waterbodies; 2005 target: 2%)
- By 2008, reduce levels of phosphorus contamination in rivers and streams so that phosphorus levels are below levels of concern established by USGS or levels adopted by a State or authorized Tribe in a water quality standard in 55 percent of test sites for major rivers, 38 percent of test sites for urban streams, and 30 percent for farmland streams.
- By 2008, improve water quality in Indian country at not fewer than 90 monitoring stations in tribal waters for which baseline data are available (i.e., at least a 10 percent improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms). (2002 Baseline: 0 stations; 2005 target: 35 stations.)
- By 2015, in coordination with other federal partners, reduce by 50 percent the number of households on tribal lands lacking access to basic sanitation. (2000 Baseline: 71,000 hholds; 2005 target: 51,000 hholds; 2008 target: 35,000 hholds.)

Resources: Total $ ~1.6 B ; Over 1,190 FTE

Program Tools:

Water Quality Standards	Water Quality Monitoring
TMDLS & related plans	Nonpoint Source
Discharge Permit Program	Wastewater Infrastructure

Program Activity Measures (PAMs): 33 PAMs (out of 88)
19 State Reporting, 18 require State Targets
PAMs from Multiple State Programs

National Watershed Goal: Improve and Restore Waters and Watersheds

(1) Restore Water Segments (Measure "L"): Use pollution prevention and restoration approaches to increase the percent of waters where water quality standards (WQS) are met. Data source is 1998/2000 303(d) lists as recorded in the National TMDL Tracking System (NTTS). This is similar to the ASIWPCA goal, which has a 2012 target.

2002 Baseline: 21,632 waters impaired
2005 Commitments: 715 (3.3%)
2006 Interim Target: Restore 5% waters to meet WQS (1,082 waters)
2012 Final Target: Restore 25% waters to meet WQS (5,408 waters)

This measure is designed to recognize the widespread success of the Surface Water Program in maintaining the quality of waters and keeping the rate of newly recognized impaired waters to a minimum. It holds constant the overall, historic backlog of waters known to be impaired in 2000 (i.e. 21,632 waters) and focuses on the rate at which 303(d) listed waters are improving their condition to meet water quality standards. The measure is calculated by comparing the baseline of State-listed waters in either 1998 or 2000[1] to the current list of impaired segments submitted in State 303(d) lists every two years (next lists are due in 2006). Waters that have been "delisted" from the baseline can be counted towards meeting this water quality restoration goal. Currently, waters that are moved off the 303(d) list for the following reasons can be counted towards meeting this measure:

1. Water no longer is impaired – meets water quality standard
2. Original basis for 303(d) listing is incorrect; water meets water quality standard
3. Change in WQS assesssment methodology, water now meets water quality standard

There are several other circumstances under which EPA can approve moving a water off a State 303(d) list, described below. Because none of these reasons are related to meeting water quality standards, they are not acceptable for counting towards meeting Measure L. These include:

3. Change in impairment terminology: e.g. From NUTRIENTS to phosphorus
4. TMDL is approved, and water moves from Category 5 to Category 4A[2]
5. TMDL not needed because other controls are in place that are designed to meet water quality standards (Move to Category 4B)[2]

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[1] EPA allowed States to skip submitting a 303(d) list in 2000, so only a few states chose to submit them for EPA approval.

[2] See EPA Draft Integrated Reporting Guidance for 2006 for more details.

6 Move to Category 4C: water impaired by POLLUTION, not pollutant[2]
7. Water body has been resegmented (divided into smaller parts or added to other waters)

(2) Restore Watersheds (2.2.1a): Use pollution prevention and restoration approaches to increase the number of watersheds were water quality standards are met in at least 80% of assessed water segments. Data sources is State 305(b) Reports.

2002 Baseline: 453 watersheds restored (out of a total of 2,262 watersheds nationwide)
2008 Target: 600 watersheds restored

(3) Improve Watersheds (2.2.1b): In all assessed water segments, the goal is to use pollution prevention and restoration approaches to maintain water quality, and have at least 20% of the assessed water segments show improvement above conditions reported in 2002. Data source is State 305(b) Reports.

2002 Baseline: 0 watersheds (out of a total of 2,262 watersheds nationwide)
2008 Target: 200 watersheds maintained and improved

Both of the above watershed measures (2.2.1a and b) require that information on individual waters or water segments in each State be aggregated to a larger "watershed" scale. This scale is the USGS 8-digit Cataloging Unit, know as HUC. There are 2,262 of these cataloging unit scale watersheds across the Nation. Watersheds were first classified with this metric using the 1996 305 (b) report data. Subsequent data provided trends in the number of watersheds meeting this criterion. The trend line, which showed initial improvements in HUC8-level water quality, projected to the 2008 deadlines in EPA's *Strategic Plan*, were the basis for the number of watersheds in the goal. The 2002 baseline was developed by identifying the watersheds where at least 20% of their waters are assessed, and then computing whether 80% of those assessed waters are meeting their water quality standards. In 2002, approximately 453 of the State's 2,262 8-digit HUCs were meeting their 80% attainment goal.

ADDITIONAL DESCRIPTION OF CORE CLEAN WATER PROGRAM ACTIVITIES

Watershed Subobjective 2.2.1 contains 33 Program Activity Measures (PAMs) for core OW programs that will affect clean waters and watersheds: water quality standards; monitoring and assessment; watershed planning, TMDLs and nonpoint source; NPDES permitting; and wastewater infrastructure. Nearly one-third of the 88 Water Office PAMs are captured under this watershed subobjective, with 19 State reporting requirements, and 18 requiring specific yearly targets.

This appendix presents additional information for the six major program grouping of PAMs (e.g. NPDES-related PAMs), and includes a summary of how the PAMs specifically support this watershed subobjective, as well a description of other issues affecting implementation, such as funding, interactions with other EPA Programs, applicable guidance documents, innovative approaches, and specific challenges.

(1) WATER QUALITY STANDARDS

A. PAM Descriptions

The Program Activity Measures for WQS under the watershed subobjective track the number of States and authorized Tribes that have completed a triennial review of water quality standards, the cumulative number of States and Territories with EPA-approved nutrient criteria and biological criteria, the cumulative number of Tribes that have EPA-approved WQS, and the annual percentage of State/Tribe/Territory WQS submissions that are approved or disapproved by EPA within 90 days.

PAM WQ-1: Number of new or revised pollutant criteria documents published in draft or final by Headquarters annually that assist States and Tribes to better control water pollution through improved water quality standards and ecological/human health risk assessment under the Clean Water Act.

PAM WQ-2: Number of States and Territories that are on schedule to adopt nutrient criteria into their water quality standards (cumulative).

PAM WQ-3: Number of States and Territories that have adopted into their water quality programs for streams and small rivers, biological criteria designed to support determination of attainment of water quality standard use designations. [Note: biological criteria may include quantitative endpoints or narrative criteria with quantitative implementation procedures or translators.] (cumulative)

PAM WQ-4: N umber of Tribes that have water quality standards approved by EPA. (cumulative)

PAM WQ-5: Number of States, Territories, and authorized Tribes that have completed a review of water quality standards within the past three years under Section 303(c) of the CWA. (56 States/Territories, & 24 authorized Tribes)

PAM WQ-6: Percent of State and Tribal water quality standards submissions (received in the 12 month period ending April 30th of the fiscal year) that are fully or partially approved/disapproved by EPA within 150.

PAM WQ-11: Number of EPA-approved analytical methods, newly available this year, for biological and chemical contaminants in Clean Water Act (CWA) programs.

WQ-26: Number of State/Tribal water quality standards submissions approved by EPA during the reporting year that include new or revised provisions that directly facilitate and accelerate achievement of the waterbody and watershed restoration/protection outcome measures (i.e., Subobjective 2.2.1 (a and b) and Strategic Target L).

B. How the PAMs Support Achieving the Subobjective

Water Quality Standards are the regulatory and scientific foundation of water quality protection programs under the Clean Water Act. Under the Act, States and authorized Tribes establish water quality standards that define the goals and limits for waters within their jurisdictions. They are used to determine which waters must be cleaned up, how much may be discharged, and what is needed for protection.

To help achieve strategic targets, EPA will continue to review and approve or disapprove State and Tribal water quality standards and promulgate replacement standards where needed; develop water quality criteria, information, methods, models and policies to ensure that each waterbody in the United States has a clear, comprehensive suite of standards that define the highest attainable uses; and as needed, provide technical and scientific support to States, Territories and authorized Tribes in the development of their standards. EPA will also continue implementation of the *Strategy for Water Quality Standards and Criteria* (EPA, August 2003), which identifies highest priority actions for strengthening the policy and scientific foundation of state and tribal water quality programs.

More specifically, EPA will develop pollutant criteria documents for high priority surface water pollutants posing the greatest risk (see Program Activity Measure WQ-1) and work with States and authorized Tribes to encourage adoption of new criteria, giving special attention to nutrient criteria for rivers, streams, lakes and reservoirs (see Program Activity Measure WQ-2) and adoption of biological criteria (see Program Activity Measure WQ-3). In a related effort, EPA will encourage and support Tribes to obtain approval to administer water quality standards programs and to develop water quality standards (see Program Activity Measure WQ-4).

As described in the discussion of watersheds in Section 2 below, EPA will also work with States and Tribes to help them focus standards efforts on those waterbodies or issues that offer the best opportunities to support watershed improvements (See Program Activity Measure WQ-26).

EPA will also work with States and Tribes to ensure the effective operation and administration of the standards program, including assuring the timely completion of triennial reviews, focused on those changes to water quality standards that will most facilitate achievement of watershed goals and targets (see WQ-5) and the timeliness of EPA's review process (see Program Activity Measure WQ-6).

C. Challenges

Several challenges affect adoption of nutrient and biological criteria and Tribal adoption of WQS. For nutrients, one challenge is collectively focusing resources for States and EPA to develop nutrient criteria at an ecoregional level. EPA's recommendations are based on a limited data set and certain assumptions, so States often want to collect additional data and tailor it to smaller ecoregions. In addition, there are often implementation issues to address. Some States are looking for more sophisticated ways of developing nutrient criteria, such as waterbody modeling, and for implementing the criteria, such as compliance schedules. For biocriteria, there are often coordination and resource allocation issues with implementing biological criteria because a substantial and continual commitment to monitoring waterbodies is needed to support the criteria. For tribal WQS, Tribes often face legal issues and resource constraints which can impede EPA authorization and standards development.

D. Interactions with Other EPA Programs

The Office of Research and Development (ORD) has helped develop alternative approaches of setting nutrient criteria, and continues to help develop biological criteria.

E. Partnerships

States, Territories, and Tribes and their associations have been partners with EPA in the development and implementation of many aspects of the WQS program. Such associations include the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), the Ohio River Water Sanitation Commission (ORSANCO), the Environmental Council of the States (ECOS), the Tribal Caucus, and various regional associates. EPA also works with the Department of the Interior (DOI) during the Tribal authorization process (Tribes must be federally recognized by DOI and authorized by EPA before they can manage their own WQS programs). Additionally, EPA works with the Fish and Wildlife Service (FWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries to coordinate and consult to ensure water quality standards protect endangered and threatened species.

F. Guidance

Water Quality Standards
General guidance on the WQS program is available at:
http://www.epa.gov/waterscience/standards/

Nutrient Criteria
http://www.epa.gov/waterscience/criteria/nutrient/guidance/index.html
This website provides links to technical guidance for developing quantitative nutrients and algal criteria for estuaries and coastal waters; assessing waterbody nutrient impairment and developing ecoregion-specific nutrient criteria in lakes and reservoirs; and selecting criteria variables, designing monitoring programs, deriving regional nutrient criteria, and implementing management practices in rivers and streams.

Biological Criteria
http://www.epa.gov/waterscience/biocriteria/
This website provides links to guidance for bioassessment and biocriteria for streams, small rivers, lakes, reservoirs, estuaries, near coastal areas, wetlands, and coral reefs.

Tribes
http://epa.gov/waterscience/tribes/
This website provides general information about Tribes and WQS.
http://www.epa.gov/owindian/
This website is the American Indian Environmental Office's homepage with links to information about grants, policies, initiatives, laws, regulations, guidance, etc.

G. Innovations

In the *Strategy for Water Quality Standards and Criteria*, EPA lays out its plans to develop an enhanced process to provide technical support for the implementation of nutrient criteria, including watershed modeling, cause and effect ecological studies, and ecological models. The *Strategy* also calls for issuing methods for the use of bioassessments to refine designated aquatic life uses. The tiered aquatic life use system will help integrate biocriteria into other parts of the water quality program. EPA is continuing to explore options for rulemaking at the federal level to provide WQS coverage in Indian country.

(2) WATER QUALITY MONITORING

A. PAM Descriptions

Four principle Program Activity Measures chart the progress of the monitoring in support of the Subobjective Implementation Plan (SIP). These include implementation of State and tribal water

quality monitoring strategies, with an approach to getting data into the Storage and Retrieval Data Base (STORET); reports on surveys of the condition of the Nation's waters, and submission of Integrated Reports (combining 305(b) and 303(d)). All are critical for tracking progress toward achieving the objective. The Program Activity Measures for water quality standards (WQS) under the watershed Subobjective track the number of States and authorized Tribes that have completed a review of water quality standards.

PAM WQ-7: Number of States and Territories that have adopted and are implementing their monitoring strategies in keeping with established schedules.

PAM WQ-8: Number of States, Interstate Agencies, and Territories that provided Integrated Reports consistent with EPA's guidance for Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act. (cumulative)

PAM WQ-9: Number of States and Territories using the Assessment Data Base (ADB or compatible electronic format) to record their assessment decisions (Integrated Report/303(d)/305(b)) and provide geo-referencing information for assessment unit locations (cumulative).

PAM WQ-10: Number of Tribes that currently receive EPA funding that have developed monitoring strategies that are appropriate to their water quality program consistent with EPA guidance and that provide their water quality data in a system accessible for storage in EPA's data system.

Additional Description of PAM WQ-8

Criteria for meeting the Measure:
State, Interstate Agency, or Territory provided an Integrated Report that meets the following criteria:

- One report is submitted that satisfies the reporting requirements of CWA Sections 303(d), 305(b), and 314. Reporting requirements (as distinct from non-required agency preferences) for these sections of the CWA are provided in Sections II and III of the 2006 Integrated Report guidance.

- A single assessment methodology was used to make water quality attainment determinations, i.e., the status of a particular waterbody is not reported as attaining standards under one section of the CWA, but impaired under another section.

- Water quality attainment status (i.e., meeting WQS, not meeting WQS, not enough data and information is available) is reported for all segments in the State. EPA's recommended 5 reporting categories in the 2004 (placing waters in one of five categories)

and 2006 (placing waters in more than one category) Integrated Report guidances are both examples of acceptable formats for presenting this information

B. How the PAMs support achieving the Subobjective

The Watershed Subobjective uses the number of watersheds attaining water quality standards as the measure of its success. Monitoring and assessment activities by the States and Tribes are essential to quantify progress toward this goal. States report that they have approximately half the funds they need to run an adequate monitoring program, with an annual shortfall of $100-150 million. To strengthen State monitoring and assessment programs, EPA issued guidance in March 2003 outlining the basic elements of a State water quality monitoring program and calling on States to develop comprehensive monitoring strategies. These strategies should help the States identify gaps and use water quality monitoring resources more effectively to support multiple decision needs and assess more of their waters . The guidance[3] calls for States to prepare a monitoring strategy by the end of 2004 and begin implementation of the strategy in 2005. The strategies should include an approach for sharing their water quality data with EPA in its STORET data system.

The FY2006 target for States adopting and implementing their monitoring strategies is all 56 States and Territories. Many States already have some type of monitoring strategy or workplan in place. All States are now working to either refine these strategies or develop new ones consistent with the Elements guidance.

Water quality monitoring and data management are necessary, but not sufficient to support program needs. Increased analytical capability is also needed to determine how program resources can be best directed to either protect or restore the waters in each jurisdiction. Assessment of water quality is required by sections 305(b) and 303(d) of the Clean Water Act. Tribes and territories also have this responsibility. Beginning with the 2002 cycle, EPA asked States to submit 305(b) and 303(d) assessments using Integrated Reports defined in EPA guidance[4] and through data structures[5] and data storage systems[6] made available by EPA.

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[3] *Elements of a State Water Monitoring and Assessment Program*, March 2003, EPA 841-B-03-003, http://www.epa.gov/owow/monitoring/elements/

[4] *Guidance for 2004 Assessment, Listing, and Reporting Requirements Pursuant to the Clean Water Act,* http://www.epa.gov/owow/tmdl/tmdl0103/index.html

[5] *National Hydrography Dataset*, The National Hydrography Dataset is a comprehensive set of digital spatial data that encodes information about naturally occurring and constructed bodies of water, paths through which water flows, and related entities. http://water.usgs.gov/GIS/metadata/usgswrd/nhd_onestop.faq.html

[6] *The National Assessment Database (NAD)* contains information, aggregated from the ADB, on the attainment of water quality standards in segments of waterbodies that are larger than a sampling stations but small

Strengthened State capacity for monitoring is needed to provide improved data and information to support State water quality standards, NPDES permits and nonpoint source pollution controls, completion of State Integrated Reports (Clean Water Act sections 305(b) and 303(d)), and establishment of total maximum daily loads to achieve water quality standards.

EPA and the States must also enhance the nation's ability to characterize national water quality conditions and better support management decisions. The General Accounting Office, the National Academy of Public Administration, the H. John Heinz II Center for Science, Economics, and the Environment, EPA's own *Draft Report on the Environment*, and the National Academy of Science have all stated that EPA and the States cannot make statistically valid inferences about water quality and do not have sufficient data to support management decisions. During 2004, EPA worked with States to initiate a survey of wadeable streams conditions. The intent was to focus in subsequent years on the conditions of lakes, large rivers, and wetlands. These surveys will be repeated periodically so that trends can be tracked giving decision makers and the public the information they need to determine effectiveness of our investments in water quality protection.

C. Funding

EPA estimates that approximately $30 million of the annual 106 grants to States support monitoring activities. Without adequate funds allotted to monitoring, it will be very difficult to achieve the enhancements needed in State monitoring programs and undertake the monitoring and analysis needed for the statistical surveys of water conditions nationwide.

D. Other Challenges

The major challenges include insufficient monitoring of waters. Large numbers of streams have not been monitored, so that they cannot be characterized using the standards that have been set for them. While this is an issue of funding, it is also an issue of methodologies that State strategies are expected to address. Data management is also a major concern. Many States do not have the staff resources to adequately support the data management systems, which are necessary for housing and analyzing the data.

E. Interactions with Other EPA Programs

The standardization of data systems has proceeded with cooperation between OW offices and Office of Environmental Information (OEI). Data from State monitoring programs was once the sole province of the Monitoring Branch in OW, where it was used for the 305(b) report. Now, the data are used for 303(d) listing and for tracking progress toward meeting the watershed

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enough to represent a homogenous appraisal of water quality standard attainment.

Subobjective measure. Regional and contract staff must work more closely to ensure that data management capabilities and data submissions use the data systems to serve this expanded need.

F. Partnerships

Partnerships between EPA and State and tribal agencies are needed to ensure the flow of data needed to track progress. The partnerships need to be centered around the acquisition of technical capabilities and staff training opportunities.

G. Guidance

EPA will issue updated *Guidance for 2006 Assessment, Listing, and Reporting Requirements Pursuant to the Clean Water Act.*

H. Innovations

EPA is also exploring the use of innovative monitoring techniques, such as remote sensing, landscape modeling, data sondes, and other new technologies that may increase the numbers and types of water monitored in a more cost-effective manner.

(3) NONPOINT SOURCE

- **PAM Descriptions**

PAM WQ-27: Number of watershed-based plans (and water miles/acres covered), supported under State Nonpoint Source Programs since the beginning of FY 2002 that have been substantially implemented. (cumulative)

PAM WQ-15: Number of waterbodies identified by States (in 2000 or subsequent years) as being primarily NPS-impaired that will be partially or fully restored (cumulative).
[Estimated 5,967 waterbodies primarily NPS-impaired].

PAM WQ-14: Estimated annual reduction in lbs/tons of nitrogen, phosphorus, and sediment from nonpoint sources to waterbodies (Section 319 funded projects only).

WQ-28: Number of Tribes that have developed and begun to implement a watershed-based plan for Tribal waters.

Additional Description of PAMs WQ-27 and WQ-28:

In FY 2002, States started to develop "watershed-based plans" that address nine elements specifically articulated in the grants guidelines (Program Activity Measure WQ-27). These criteria were slightly revised in the program's FY2003 Section 319 Grants Guidelines. The plans are mainly designed to remediate impaired waters (with or without TMDLs), although they should encompass protective actions as well in watersheds that have a mix of impaired and threatened waters. "Substantially implemented" means that either of the following two conditions is fulfilled:

1) Those actions called for in the initial plan (i.e. prior to any later adjustment to the plan that may be deemed necessary) specifically geared towards remediating the impairment(s) have been implemented. The plan in this case must meet the nine criteria outlined in the NPS grants guidelines.

2) Sufficient management measures and practices called for in the plan have been implemented to achieve the load reduction that are needed to met WQS, even if the plan comes close to – but falls short of – including all nine criteria articulated in the NPS grants guidelines.

Given that an adaptive management approach is common when it comes to watershed restoration, it is possible that completing the actions called for in the initial plan may not be enough to restore the watershed. Thus, an iterative approach may be necessary. Since that is a process that may continue for a substantial amount of time, we have used the words "substantially implemented"

rather than "completed implementation."

PAM WQ-28 tracks the number of Tribes that have developed and begun to implement a watershed-based plan in relation to the Tribal Section 319 program. Many Tribes are still at the beginning stages of nonpoint source program implementation and need additional financial and technical support from EPA in order to successfully integrate watershed-based planning into their Tribal Section 319 programs. EPA will continue funding additional Tribal Nonpoint Source Workshops that include training on the development of watershed-based plans, and will target the use of competitive funding for the development and implementation of watershed-based plans (consistent with the FY 2005 Tribal 319 guidelines). Regional Tribal Coordinators will track the number of watershed-based plans that have been developed and are being implemented and report this progress annually to the National Section 319 Tribal Coordinator.

Additional Description of PAM WQ-15 and WQ-14

For PAM WQ-15, the baseline of 5,967 waterbodies was calculated using information from EPA's *Draft Report on National Costs to Implement TMDLs*. EPA added all NPS-only waters (4,749) to 50% of mixed point source (PS)/NPS (1,218 = 50% of 2,437 PS/NPS waters) to derive a total of 5,967 waters. It should be noted that States did not identify sources for about half of the 1998/2000 303(d)-listed waters. The report used 2000 lists for those States that turned in a 2000 303(d) list, and 1998 lists for the remaining States.

PAM WQ-14 only counts load reductions realized from 319h grant funded projects, unlike PAM WQ-15, which measures the effects of the NPS management program as a whole.

B. How the PAMs Support Achieving the Objective

Subobjective 2.2.1 includes a measure to restore impaired watersheds. The main focus of watershed-based plans is also to restore watersheds, although the watersheds addressed by watershed-based plans will typically be smaller-sized local watersheds, not 8-digit HUCs (although the size of the watershed covered by a watershed-based plan may vary substantially by Region). Furthermore, load reductions of nutrients and sediment, and the restoration of NPS and mixed-impaired waters, are obviously directly linked to the purpose of the subobjective.

C. Challenges

To the extent that some watershed plans may not use Section 319 funds, we may undercount the number of plans. However, given that it is the Section 319 guidelines that require watershed-based plans, we expect that the vast majority of plans will use at least some Section 319 funds. Further, counting waterbody miles/acres is contingent upon States doing an accurate job of georeferencing their Section 319 projects. Since indexing projects using the NHD is a new process, we are likely

to have a learning curve with respect to the accuracy of States' georeferencing. Finally, load reduction estimates will be very rough, as most will be calculated using relatively simple models.

D. Interactions with Other EPA programs

Watershed-based plans are to be the main mechanism for restoring watersheds that are primarily impaired by NPS (although such plans will also account for actions needed to control point sources). Therefore, there is considerable intersection with the TMDL program and, to a varying extent, the storm water, CAFO, source water, and wetlands programs. Plans should also include development or implementation funds from any available source. These may include funds from the SRFs, funds from 106 for monitoring, or any other source. A significant portion of plan development/implementation funds are expected to come from programs outside of EPA, such as Farm Bill funds.

E. Partnerships

A significant degree of funding for plans covering agricultural areas will come from USDA funds, especially the Conservation Reserve Program (CRP) and Environmental Quality Incentives Program (EQIP). EPA is promoting the use of Section 319 funds for planning and monitoring where Farm Bill funds are available for implementation. Local or State funding are also expected to be heavily utilized. As with any effective watershed planning process, a high degree of local involvement in planning and implementation efforts will be necessary for watershed-based plans to successfully restore impaired watersheds.

F. HQ/Regional Guidance

Nonpoint Source Program and Grants Guidelines for States and Territories (October 23, 2003)
available at: http://www.epa.gov/fedrgstr/EPA-WATER/2003/October/Day-23/w26755.htm

Modifications to Nonpoint Source Reporting Requirements for Section 319 Grants (September 27, 2001)
available at: http://www.epa.gov/owow/nps/Section319/grts.html

G. Innovations

Watershed-based plans, as articulated in the NPS guidelines, are much more comprehensive than most existing watershed plans. The elements listed include such things as estimating load reductions, listing amount and sources of funding, identifying measures to be implemented to achieve restoration, and providing an information/education component, and a describing a monitoring component to verify progress, etc. This planning process will enable States, local communities, and their partners to better understand what actions are most needed to improve

watershed water quality.

(4) TOTAL MAXIMUM DAILY LOADS (TMDLs)

A. PAM Descriptions

The PAMs for TMDLs under the watershed subobjective track: 1) TMDLs approved as part of larger, more comprehensive watershed processes, 2) State progress in meeting national policy regarding the pace at which TMDLs should be established, 3) Tribal participation in the TMDL program, 4) EPA's performance in timely approval of TMDLs, and 5) inclusion in TMDLs of provisions to enable water quality trading.

PAM WQ-12: Percentage of the TMDLs required for waters currently on the 303(d) list that are established or approved by EPA that are "on pace". Annual pace targets will be based on state schedules or straight-line rates that ensure that the national policy is met (on average, within 13 years of listing). By 2008, 100 percent of TMDLs required for waters on 303(d) list will be established or approved within 13 years of listing consistent with national policy. In 2006, Regions are requested to provide a table of actual numbers of TMDLs to show how percentages are calculated.

PAM WQ-13: Number of TMDLs for impaired waterbodies which affect Tribal waters approved by EPA where the Tribe participated in the TMDL or comparable watershed restoration planning process.

<u>Calculating PAM WQ-12</u>

Measure Description: Percentage of the TMDLs required for waters currently on the 303(d) list that are established or approved by EPA that are "on pace". Annual pace targets will be based on state schedules or straight-line rates that ensure that the national policy is met (on average, within 13 years of listing).

2006 Target: 100% pace

Regions develop and document their annual pace on a State-by-State basis as follows:

(1) Using the most current State 303(d) list, determine the total number of TMDLs that need to be approved/established. This number is the "Universe of all TMDLs needed" in Row D of Table 1, below. (Note: This table shows FY05 numbers as reported last year)

(2) Based on a state-by-state estimate of pace, sum the number of TMDLs that need to be completed in FY06 to maintain your Regional pace. Define your individual State pace and how

they add up to a regional pace. State pace is based on state schedules or straight-line rates that ensure that the national policy is met (on average, within 13 years of listing). This number should be reported in Row A. Two "examples" are shown for Region 1 (171) and Region 2 (115).

(3) Identify the total number of TMDLs in the Region expected to be completed in Row B, below.

(4) Calculate in Row C what your FY06 Regional Percentage Pace is based on comparing your FY06 Target (Row B, the numerator) to the FY06 TMDL Pace (Row A, the denominator). In the hypothetical example below, R1 has a percentage pace of 171/171 or 100%, while R2 has a percentage pace of 100/115 or 87%. The HQ policy has been that Regions should maintain an annual pace between 80% and 100%.

(5) HQ Watershed and Monitoring Branches are continuing to work on improving the NTTS and ADB systems by which States and Regions report their TMDLs approved/established and their 303(d) waters and the associated Integrated Reporting Guidance. At the end of each fiscal year, Regions must use the NTTS system as the basis to record their TMDLs approved/established. Sufficient time will be given to the regions to add into NTTS TMDLs that were approved late in the year (e.g., end of September).

(6) At the close of the FY, Regions may submit to HQ a summary of how the TMDL pace denominator (Row A) may have changed during the year to affect the pace. For example, if R2 approved 100 TMDLs, and another 15 TMDLs were no longer needed (e.g. 5 were placed in Category 4B, another 10 were shown not to need a TMDL because water quality standards are met), then R2 could adjust their pace number from 115 to 100 and report meeting an end of year pace of 100% instead of 87%.

Table 1. Calculating WQ-12.

		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	TOT
A.	2006 Pace: Number of TMDLs to be completed in FY06 to maintain pace DRAFT EXAMPLE	171	115									
B.	2006 Target: Number of TMDLs projected to be completed in FY06 DRAFT	171	100	523	275	325	399	452	262	310	350	3177
C.	FY06 Percentage on Pace: FY06 Target divided by FY06 Pace EXAMPLE	100%	87%									
D.	Universe ALL TMDLs needed DRAFT	3354	2288	12248	6528	9913	3015	1704	2733	2391	1700	46054

B. How the PAMS Support Achieving the Subobjective

The watershed subojective refers to working with States, interstate agencies and Tribes to foster a watershed approach as the guiding principle for implementation of clean water programs, and an essential strategy for meeting key environmental objectives, such as attaining and maintaining conditions described in State water quality standards (WQS). TMDLs are a significant tool for ensuring the success of watershed plans in impaired waters because they focus on clearly defined environmental goals–meeting WQS, quantify pollutant loadings consistent with meeting WQS, identify sources of pollutant loadings, and quantify the allocations of acceptable pollutant loads among those sources. They establish a pollutant budget, which is then implemented via permit requirements, and through local, State, and federal watershed plans/programs that employ programmatic tools (Section 319, CWSRF, Farm Bill, etc.).

These PAMs encourage the development of TMDLs on a watershed basis because developing all needed TMDLs within a watershed as part of an overall effort can save time and money and result in more effective solutions. Further savings can be realized by bringing in other agencies and organizations to help develop TMDLs, and enhanced stakeholder involvement also increases the probability that reductions indicated by the TMDL will actually occur. Integrating TMDLs into more comprehensive watershed planning can also help develop and create the opportunity for innovations such as water quality trading and watershed-based permitting. At the same time, the States and EPA need to keep on track with EPA's policy of establishing TMDLs within 8 to 13 years of listing so that we can proceed apace with the business of restoring the nation's water quality. Although no Tribe is authorized to manage a TMDL program at this time EPA wants to encourage tribal involvement in water quality decisions that may affect a Tribe directly or indirectly. Timely EPA action on TMDL submissions will help put the framework in place so watershed planning is done against the correct benchmarks. Finally, EPA believes that, to support the 2003 Water Quality Trading Policy, www.epa.gov/owow/watershed/trading.htm TMDLs and watershed plans should include provisions to enable trading wherever practical to achieve pollution reduction in a cost-effective manner.

C. Challenges

There are challenges at every step of the program. The number of TMDLs that needs to be done is dependent upon a determination that the water does not meet water quality standards, and the challenges faced by the Standards Program affect these determinations. Many waters are listed because they do not meet narrative criteria, which need to be translated in numerical standards before a TMDL can be established. Data limitations on sources of pollutants also may slow down TMDL development.

Also, developing TMDLs using the watershed approach often takes longer than developing TMDLs with a narrower focus (dealing with individual waterbodies, pollutants only, and not

engaging a wide array of stakeholders). These extra costs should be recovered in the long run as strategies addressing both protection and remediation, as well as a wider array of stressors than just "pollutants", are implemented by a wide array of stakeholders bringing differing sets of expertise and resources to bear. Finally, trading is a practice new to many States and it may be difficult for some States to assess whether trading is an effective approach in any given water body.

D. Interactions with other EPA programs

TMDLs intersect with many other programs. The goals to which TMDLs aspire are established by State, tribal, and EPA water quality standards programs. Monitoring is essential to determining whether waters are impaired, and by what stressors. Monitoring and other assessment tools are also needed to identify sources of pollutants. The expertise found in the NPDES and 319 programs can be most helpful in the analysis of pollutant loads from various sources, and is essential to ensuring that load reductions called for in a TMDL take place. In the watersheds of some waters, the interests of the Source Water Protection Program under the Safe Drinking Water Act (SDWA) intersects with the TMDL Program. Funds available through both clean water and drinking water State revolving loan programs can provide essential support in the implementation phase. Wetland restoration stimulated by the Section 404 program can also help achieve reductions in loadings of nutrients, sediments, and other pollutants.

E. Partnerships

States, Territories and Tribes and their associations have been partners with EPA in the development and implementation of many aspects of the TMDL program. Such associations include ASIWPCA, the Ohio River Sanitation Commission (ORSANCO), and ECOS. EPA also works with UDSA in the development of watershed planning guidance.

F. Guidance

In addition to funding a circuit-rider program to help regions and States establish TMDL, EPA has issues several guidance documents available at www.epa.gov/owow/tmdl/techsupp.html:

Stressor Identification Guidance. This guidance leads water resource managers through a rigorous process to identify stressors that cause biological impairment in aquatic ecosystems and to assemble cogent scientific evidence that supports conclusions about potential causes.

Protocol for Developing Pathogen TMDLs: First Edition PDF format (2M), Jan. 2001, EPA 841-R-00-0002

Protocol for Developing Nutrient TMDLs PDF version (2.5MB), November 1999, First

Edition, EPA 841-B-99-007

Protocol for Developing Sediment TMDLs , PDF version (1.8MB), October 1999, First Edition, EPA 841-B-99-004

EPA also provided funding to the National Sedimentation Laboratory of USDA's Agricultural Research Service to support development of a methodology to evaluate whether a stream or river is impaired due to clean sediment. This report, Evaluation of clean sediment transport data for clean sediment TMDL is available at www.sedlab.olemiss.edu/cwp_unit/NSLReport17.html

EPA Region 10 has developed a Water Quality Trading Assessment Handbook to assist stakeholders in determining whether trading may work successfully in their watershed. The handbook guides stakeholders through a structured, informal assessment of trading opportunities. It looks at the environmental, economic, and technical factors in a watershed that influence stakeholders' ability to create a water quality trading market. The handbook is available at http://yosemite.epa.gov/R10/WATER.NSF/webpage/Water+Issues+in+Region+10 under the topic Water Quality Trading.

G. Innovations

States can reduce the list of TMDLs needed by following current HQ guidance, which states that waters that have programs in place designed to meet water quality standards do not need to be listed as needing a TMDL. Another example is that OWOW has an ongoing project with the Innovations Action Council to realize the benefits of innovations in the TMDL program. In addition, innovations in watershed management are encouraged by a growing number of TMDLs that will include provisions for nutrient trading. In certain watersheds, trading can achieve TMDLs more flexibly and cost-effectively by allowing sources with higher pollutant control costs to use pollutant reductions created by sources with lower costs.

(5) National Pollutant Discharge Elimination System (NPDES) Permitting Program

A. PAM Descriptions

PAM WQ-17: Number of NPDES program authorities where a comprehensive assessment of NPDES program integrity has been conducted (beginning in FY 04) and the percentage of assessed programs that are complying with implementation schedules for all those follow-up actions for which a schedule has been established.

PAM WQ-18: Percentage of all NPDES permits are considered current.

PAM WQ-19: Number of CAFOs that are covered by an NPDES permit.

PAM WQ-20: Percent of States for which the States/Region has issued NPDES general permits requiring Phase II storm water management programs for all municipalities (MS4S) and for construction.

PAM WQ-21: Percent of Significant Industrial Users (SIUs) in POTWs with Pretreatment Programs and percentage of known Categorical Industrial Users (CIUs) in non-pretreatment POTWs that have control mechanisms in place that implement applicable pretreatment requirements.

PAM WQ-22: Estimated annual reduction in pollutants discharged to waterbodies from NPDES permits based on effluent guidelines (including CAFOs), pretreatment standards, and other regulatory controls for storm water, POTWs, and CSOs.

PAM WQ-29: Percentage of scheduled "high priority NPDES permits" that are current for States and Tribes.

PAM WQ-30: Number of dischargers with permits providing for trading within a watershed between the discharger and other water pollution sources and the number of dischargers that carried out trades.

PAM WQ-31: Number of watersheds in which a watershed permit(s) have been issued, and the number of States issuing NPDES permits using a rotating basin process.

B. How the PAMs support achieving the Subobjective

To address Subobjective 2.2.1 to improve Water Quality on a Watershed Basis, the NPDES program is directing its efforts to issuing high quality permits in watersheds where impairments can be addressed through updated permits issued on a priority basis. The Permitting for Environmental Results Strategy, including this focus on environmental results, addresses program efficiency and integrity. The efficiency component consists of activities to streamline permit issuance, such as permit bundling and use of general permits. Program integrity addresses important aspects of overall NPDES program operations including the quality of the permits that are issued. Other elements that will be addressed include compliance with water quality standards and the incorporation of TMDL requirements into permits. The NPDES program PAMs reflect implementation of the Permitting for Environmental Results Strategy. Timely, effective NPDES permits are critical to the protection and improvement of water quality on a watershed basis.

Storm water and CAFO permitting will focus limited resources on the most critical environmental problems resulting in both nutrient and sediments reductions in rivers and streams. State issuance of NPDES CAFO permits should result in pollutant reductions of over 2 billion pounds annually, and State issuance of storm water permits should result in long term annual reductions of approximately 100 billion pounds of sediment. The overall NPDES program should result in annual reductions of 130 billion pounds of pollutants.

C. Challenges

Challenges include increased program complexity and scope (CAFOs, storm water, etc.) in conjunction with declining State resources. Data issues impact our ability to measure program results and to determine where to focus resources to restore watersheds. For example, lack of latitude/longitude data and indexed 303(d) listing data impedes development of priority permit lists. Additional challenges have been raised by approx 20 withdrawal petitions and by lawsuits that have been filed against State NPDES programs.

D. Interactions with Other EPA Programs

Interactions with the Office of Enforcement and Compliance Assurance (OECA), ORD, and other offices in OW are important to achieving environmental results through the NPDES program. Water quality standards, TMDLs, and environmental data from a watershed in which a permit is to be issued must be available to develop an effective permit. ORD research in areas, such as pathogens, is needed to determine appropriate controls. Coordination with OECA on compliance and enforcement activities is necessary to ensure that permit requirements are implemented.

E. Partnerships

Permitting for Environmental Results involves close collaboration between EPA and the States, both on an individual basis and in cooperation with ASIWPCA, to assess the performance and health of State NPDES programs and use of improved data and management systems to measure program performance and improvement and sustain long-term program health

EPA is building on a close relationship with USDA for implementation of the CAFO rule and other agencies such as the FWS, NOAA Fisheries, Department of Energy, Corps of Engineers, Advisory Council on Historic Preservation and Department of Transportation in implementing the storm water and other NPDES programs.

F. Guidance

Existing

Producers' Compliance Guide For Concentrated Animal Feeding Operations (November 2003)

NPDES Permit Writers' Guidance Manual and Example NPDES Permit for Concentrated Animal Feeding Operations (December 2003)

Watershed-Based National Pollutant Discharge Elimination System (NPDES) Permitting Implementation Guidance (December 2003)

Implementing the Partial Remand of the Storm Water Phase 2 Regulations Regarding Notices of Intent & NPDES General Permitting for Phase 2 MS4s April (2004)

National Whole Effluent Toxicity (WET) Implementation Guidance (December 2004)

Expected

Watershed-Based NPDES Permitting Technical Guidance (December 2005)

G. Innovations

To leverage progress through innovation using a market based approach, EPA will promote water quality trading among NPDES permittees and other sources on a watershed basis. Trading programs allow facilities facing higher pollution control costs to meet their regulatory obligations

by purchasing environmentally equivalent (or superior) pollution reductions from another source at lower cost, thus achieving the same water quality improvement at lower overall cost.

As part of our *Permitting for Environmental Results Strategy*, EPA is developing several tools to characterize all NPDES permits in order to foster better prioritization of permit issuance based on environmental results. These tools will make it easier to evaluate whether permits are ensuring that water quality standards will be met and that TMDLs will be implemented.

(6) Sustainable Wastewater Infrastructure Support

A. PAM Descriptions

PAM SS-4: Number of States that have adopted the Voluntary Management Guidelines for on-site sewage management. (cumulative)

PAM WQ-16: Number and dollar value of projects financed with Clean Water State Revolving Fund loans to prevent polluted runoff from non-point sources. (cumulative)

PAM WQ-23: Fund utilization rate [cumulative loan agreement dollars to the cumulative funds available for projects] for the Clean Water State Revolving Fund.

PAM WQ-24: Rate of return on Federal investment [cumulative dollar amount of assistance disbursements to projects divided by cumulative Federal outlays for projects] for the Clean Water State Revolving Fund.

PAM WQ-25: Number of State Revolving Fund programs that have developed output and outcome measures.

PAM WQ-32: Number of States using integrated planning and priority systems to make CWSRF funding decisions, including planning on a watershed bases. (cumulative)

B. How the PAMs support achieving the Subobjective

Decentralized systems, often called "septic" or "onsite" systems, are an important and permanent part of the nation's wastewater infrastructure. They are close to the source of the wastewater they treat and typically use small pipes for collecting domestic wastewater from individual homes, unlike centralized urban wastewater treatment systems that pipe wastewater many miles through sewers each day. Decentralized systems also include clusters of onsite systems, large capacity septic systems, and small collection and treatment systems commonly called "package plants."

The CWSRF has the flexibility and resources to fund a broad range of projects that protect and improve watersheds. With over $52 billion in total funds, the fund utilization measure ensures that the CWSRF program is investing the optimal amount of funding in watershed protection project. The CWSRF is already highly efficient at delivering funding to projects. However, the PAM for fund utilization will increase slightly by 2008 to further increase the flow of funds to watershed projects. The nonpoint source investment measure encourages States to broaden the mix of watershed projects. While the majority of CWSRF funds will continue to be directed toward wastewater infrastructure, more nonpoint source funding will help States address the most

important projects in each watershed, regardless of their nature. Integrated Planning and Priority Setting Systems (IPPS) help States set funding priorities based on water quality information and the efficacy of various solutions. When States consider watershed information as a whole and select the most effective projects, it enhances the CWSRF's ability to protect watersheds and improve water quality.

C. Challenges

In most cases, decentralized systems are not regulated under the NPDES. State regulations vary, and unless decentralized systems are properly sited and maintained, they can leak or cease functioning altogether, allowing untreated or partially treated wastewater to enter streams, lakes or ground water.

There are a number of challenges facing the implementation of the CWSRF's PAMs. State resource constraints impact the staffing levels of State offices implementing the CWSRF. With fewer staff, voluntary efforts such as Integrated Planning and Priority System development and use are diminished. In more drastic situations, reduced staffing levels may result in less funding for watershed projects. Market conditions affect the desirability of CWSRF loans. With lower market rates, the difference between market rate interest and low-interest CWSRF loans is diminished. Communities may chose to avoid program requirements by issuing their own debt and avoiding the CWSRF. A slow economy may also cause communities to delay infrastructure investments. States are responsible for deciding how the CWSRF funds are used. While EPA has been emphasizing the role of nonpoint source projects, EPA's Clean Water and Drinking Water Infrastructure GAP Analysis also identified a $1 to $6 billion per year gap between capital needs and spending for wastewater infrastructure. These two messages are in direct competition with one another. As with most other water programs, the CWSRF is plagued with a lack of water quality data that defines the water quality benefit gained from each investment, making it difficult to measure watersheds improved by the CWSRF.

E. Partnerships

Effective decentralized wastewater treatment systems depend on effective installation and maintenance. EPA worked with a steering committee of stakeholders across the onsite industry to finalize Voluntary Guidelines to help States to set requirements that protect their ground and surface water. EPA depends on its State partners to implement these guidelines or equivalent measures, and to communicate the results of their efforts. Through this partnership we will be able to see a national picture of decentralized systems as an effective and necessary part of the nation's wastewater infrastructure.

The key partnership affecting implementation of the CWSRF Program and its PAMs is the relationship with each State and Puerto Rico. The States and Puerto Rico operate the 51 different

CWSRF Programs with EPA guidance and national oversight. EPA maintains an active dialogue with the State programs through the State/EPA SRF workgroup. We also work closely with the Council of Infrastructure Financing Authorities, an organization representing primarily the financial agencies implementing the SRF programs in each State and the Commonwealth.

EPA has been working to enhance its relationship with the USDA on two fronts. The Rural Utility Service of USDA also funds wastewater infrastructure. EPA and USDA have encouraged and supported stated level funding coordination committees that streamline funding application and project administration requirements. The Natural Resources Conservation Service of USDA implements a number of nonpoint source funding programs. EPA has informed the State Conservationists about the CWSRF and how it is being used to compliment Farm Bill assistance to growers. EPA also works with a number of non-profit organizations, such as the Trust for Public Land, the Nature Conservancy, the Northeast/Midwest Institute and others, who periodically publish information about the CWSRF and its uses.

F. Guidance

EPA has issued Voluntary Guidelines for Onsite/Decentralized Wastewater Management. These guidelines offer local governments a comprehensive set of guiding principles and practices for management of onsite systems including siting, design, installation, maintenance, and monitoring. We are working with a broad stakeholder group to conduct seminars and other outreach events.

EPA has built an impressive library of information about how the CWSRF can be used to protect watersheds. Starting in 1996, EPA and the States negotiated the Funding Framework, which laid the foundation for expanding the use of the CWSRF beyond wastewater infrastructure. This has been followed by policy memos that clarify various eligibility issues. EPA always seeks to provide States with the broadest flexibility possible to enhance their ability to reach high priority watershed projects. In 2005, EPA will publish a guide that will help States interested in purchasing land or easements to protect water quality. An agricultural funding brochure is also being developed that will compile information on State funding practices and innovative ideas. This brochure will be completed in 2005.

G. Innovations

EPA is working with a decentralized systems stakeholder group to conduct seminars and other outreach events and to provide assistance to States in adopting the Management Guidelines. In 2005 we will explore options to promote management programs when funding decentralized systems using CWSRF funds.

The CWSRF program was established to be a very flexible funding tool for a broad array of water quality projects. EPA has encouraged the States to use this flexibility to best meet the needs of

priority projects. Two financial innovations include conduit lending and co-funding. By using conduits, or intermediaries, State CWSRF programs can make loans to an entity who can then re-lend or grant those funds to eligible projects. This helps States reach small borrowers, such as homeowners with failing decentralized systems, and agricultural projects. Co-funding involves coordination between different funding programs. Because the CWSRF comprises loan repayments and other non-Federal monies, those funds can be used to match other Federal programs. When EPA shared information about the CWSRF to USDA's State Conservationists, it highlighted the ability to match Farm Bill programs and provide bridge loans to growers waiting for Farm Bill cost shares. This technique results is greater flexibility to fund financially needy projects and implement water quality projects faster, resulting in watershed protection sooner than would otherwise be achieved.

(7) TRIBAL ACTIVITIES

The Water Program recognizes that resource constraints require Tribes to establish near- and longer-term priorities, and to focus initially on a few key program elements. In these instances, EPA encourages Tribes to use a watershed approach as an organizing construct wherever practicable, and to consider three elements – monitoring and assessment of water quality, implementation of water quality and drinking water standards, and infrastructure improvement, i.e., construction, operation, and maintenance of wastewater and drinking water systems. The Water Program believes that these elements are building blocks that provide the foundation for protecting human health and aquatic ecosystems in Indian country.

Tribal programs and activities are reflected in both tribe-specific measures and as part of broader measures that address both tribal and State activities. The Agency is in the process of updating the Tribal strategy for water programs, and recognizes the need to ensure that measures and emphases are consistent between the Tribal strategy and the Water *Strategic Plan*.

Measures

A. Strategic Targets

Measure N: Number of monitoring stations in Tribal waters for which baseline data are available where water quality is improved (i.e., shows at least a 10% improvement for each of four key parameters: total nitrogen, total phosphorus, dissolved oxygen, and fecal coliforms.) (900 stations nationwide).

Measure O: Number of households on tribal lands lacking access to basic sanitation.

PAM Description

PAM WQ-4: Number of Tribes that have water quality standards approved by EPA. (cumulative)

PAM WQ-10: Number of Tribes that currently receive EPA funding that have developed comprehensive monitoring strategies that are appropriate to their water quality program consistent with EPA guidance and that provide their water quality data in a system accessible for storage in EPA's data system.

PAM WQ-13: Number of TMDLs for impaired waterbodies which affect Tribal waters approved by EPA where the Tribe participated in the TMDL or comparable watershed restoration planning process.

PAM WQ-18: Percentage of all NPDES permits that are considered current.

(8) OTHER

WQ-33: Number of water segments known to be impaired or threatened for which States and EPA agree that initial restoration planning is complete (e.g. EPA has approved all needed TMDLs for pollutants causing impairments to the waterbody or has approved 303(d) list that recognizes that the waterbody is covered by a Watershed Plan (Category 4b)).